UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/702,446	11/07/2003	Mikio Sugiki	245143US6	9720

22850 7590 09/28/2006

C. IRVIN MCCLELLAND
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
GOMA, TAWFIK A	

ART UNIT	PAPER NUMBER
2627	

DATE MAILED: 09/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/702,446	SUGIKI ET AL.	
	Examiner	Art Unit	
	Tawfik Goma	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,9 and 10* is/are rejected.

7)☒ Claim(s) *6-8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

Claims 6-8 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend on from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5 and 9-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-5 recite the limitations "the half-regions," "the optical axis," and "the other half-region" in lines 22-25 of claim 1. There is insufficient antecedent basis for these limitation in the claim.

Claims 9 and 10 recite the limitations "the half-regions," and "the optical axis," in lines 14-15 of both claims. There is insufficient antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horimai et al (US 5917798) in view of Tanaka et al (US 6490061).

Regarding claim 1, Horimai discloses a holographic recording/reproducing apparatus which either records or records and reproduces information holographically (fig. 2 and col. 9 lines 37-45), the holographic recording/reproducing apparatus comprising: a laser source (20, fig. 31); a splitter unit which splits a laser beam from the laser source into a first laser beam for generating a signal beam and a second laser beam which serves as a reference beam (117, fig. 28 and col. 27 lines 51-59); a spatial light modulator which spatially modulates the first laser beam in accordance with the information to be recorded (col. 27 lines 51-56 and fig. 29), the modulated first laser beam serving as the signal beam (col. 27 lines 51-56); and a focusing lens system which focuses the signal beam and the reference beam onto the holographic recording medium (12, 13, fig. 28), wherein, in a recording process, the signal beam passes through the focusing lens system such that the central axis of the signal beam is in one of the half-regions separated along the optical axis of the focusing lens system and the reference beam passes through the focusing lens system in the other

half-region which is free from the signal beam (figs. 28-30 and col. 27 lines 51-59), the signal beam and the reference beam being focused onto the holographic recording medium so that the information is recorded on the holographic recording medium (col. Col. 27 lines 51-67 thru col. 28 lines 1-10). Horiami further discloses a servo system for positioning a pickup relative to the recording medium (85, fig. 3). Horimai fails to disclose wherein the positioning unit is for positioning a holographic recording medium. In the same field of endeavor, Tanaka discloses a holographic recording/reproducing apparatus with a positioning unit for positioning a holographic medium (19, 20, fig. 2). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the recording/reproducing apparatus disclosed by Horimai by providing a positioning unit for the holographic medium as taught by Tanaka. The rationale is as follows: One of ordinary skill in the art would have been motivated to provide a positioning unit for positioning the holographic medium in order to allow for interchangeability of holographic medium used with the apparatus (see Tanaka col. 3 lines 2-5)

Regarding claim 2, Horimai further discloses wherein the holographic recording medium is a transmissive holographic recording medium (fig. 13), wherein, in the recording process, the signal beam passes through the focusing lens system such that the central axis of the signal beam is in one of the half-regions separated along the optical axis of the focusing lens system and the reference beam passes through the focusing lens system in the other half-region which is free from the signal beam, the signal beam and the reference beam being focused onto the holographic recording

medium so that the information is recorded on the transmissive holographic recording medium (fig. 31 and col. 27 lines 51-59), and wherein, in a reproduction process of reproducing the information recorded on the holographic recording medium, the first laser beam is blocked and the reference beam is directed onto the holographic recording medium at the same incident position and incident angle as those of the reference beam in the recording process so that a signal reproduction beam corresponding to the signal beam is generated in accordance with the information recorded on the holographic recording medium (col. 28 lines 25-38), the signal reproduction beam being guided through the second lens system such that the signal reproduction beam is point symmetric to the signal beam in the recording process across the holographic recording medium (fig. 13). Horimai fails to disclose wherein the apparatus used with a transmissive type holographic medium including wherein the focusing lens system is a first lens system and the holographic recording/reproducing apparatus further comprises a second lens system which faces the first lens system across the positioning unit. In the same field of endeavor, Tanaka discloses an apparatus for a transmissive type holographic medium including a first and second lens system which are opposite each other across the positioning unit (13, 21, fig. 2). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the recording/reproducing apparatus disclosed by Horimai by providing a second lens system opposite the first lens system as taught by Tanaka. The rationale is as follows: One of ordinary skill in the art at the time of the applicant's

invention would have been motivated to provide a second lens system in order to reproduce the light that passes through the holographic medium of a transmissive type.

Regarding claim 3, Horimai further discloses wherein the holographic recording medium has a reflective film (4,fig. 31), wherein, in the recording process, the signal beam passes through the focusing lens system such that the central axis of the signal beam is in one of the half-regions separated along the optical axis of the focusing lens system and the reference beam passes through the focusing lens system in the other half-region which is free from the signal beam (fig. 28), the signal beam and the reference beam being focused onto the holographic recording medium so that the information is recorded on the holographic recording medium having the reflective film (col. 27 lines 51-59), and wherein, in a reproduction process of reproducing the information recorded on the holographic recording medium, the first laser beam is blocked and the reference beam is directed onto the holographic recording medium at the same incident position and incident angle as those of the reference beam in the recording process so that a signal reproduction beam corresponding to the signal beam is generated in accordance with the information recorded on the holographic recording medium (fig. 31 and col. 28 lines 25-38), the signal reproduction beam being guided through the focusing lens system such that the signal reproduction beam is symmetric to the signal beam in the recording process about the optical axis of the focusing lens system (127, 128, fig. 33).

Regarding claim 9, Horimai in view of Tanaka disclose everything claimed as applied to claims 1 and 2 above.

Regarding claim 10, Horimai in view of Tanaka disclose everything claimed as applied to claims 1 and 3 above.

Allowable Subject Matter

Claims 4 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Claims 4 and 5 are allowable over the prior art of record because the prior art of record including closest US patents Horimai (US 5917798) and Tanaka (US 6256281), considered individually or in combination fail to disclose or fairly teach a holographic recording/reading apparatus including the combination of an optical element with the features and function as claimed in claims 4 and 5.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tawfik Goma whose telephone number is (571) 272-4206. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

T. Goma
9/26/2006

WILLIAM KORZUCH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600